

IMPROVING COLLECTION AND SORTING OF RIGID POLYPROPYLENE PACKAGING WASTE



PROBLEM ENCOUNTERED AND OBJECTIVE

Rigid polypropylene packaging is widely used in food and consumer products, but its recycling quality depends strongly on how waste is collected and sorted. Mixed streams can introduce films, non-PP plastics, labels, residues and other contaminants that reduce purity and make recycled materials less predictable. The objective was to compare home-separated and post-home-separated collection systems for rigid PP packaging, and assess how they influence recycle quality, contamination levels and suitability for further mechanical recycling applications.

MAIN RESULTS / OUTCOMES

STOPP results show that rigid PP packaging from both collection systems can be mechanically recycled into technically usable recyclates. However, home-separated collection, especially in Finland, generally produced more stable and purer material, with lower variability in melt flow behaviour. Post-home-separated streams showed higher risks of cross-contamination, particularly from flexible polyethylene packaging and residue-related substances. The study confirms that collection and sorting choices directly affect recycle consistency, processing performance and the potential value of recycled PP.

PRACTICAL RECOMMENDATIONS

Prioritise separate collection of rigid plastic packaging where possible, and avoid mixing rigid PP with flexible films or highly contaminated household waste. Waste operators should use clear sorting categories, quality control, polymer identification and NIR-based sorting to isolate PP-rich streams. Municipalities should support citizens with simple instructions and well-designed collection systems. Recyclers should monitor incoming feedstock quality and adapt washing, density separation and air separation steps to remove impurities before extrusion and pelletising.

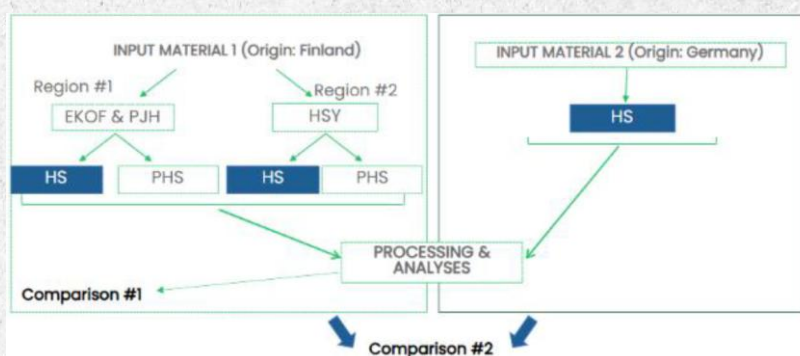


Fig. 1: Flowchart of collected rigid PP waste per two collection systems at regional and country level.

HS (Home Separated)
PHS (post Home Separated).

Further information

This information has been extracted from D5.2 and can be found here: [STOPP REPORTS](#)

About this abstract

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STOPP is a Horizon Europe project aiming to transform food plastic packaging through the “5 Rs”: Refuse, Reduce, Redesign, Reuse, and Recycle. Aligned with the EU’s Packaging Directive, it develops training materials and strategies to promote circular economy solutions. Engaging stakeholders, STOPP advances recycling, reusable packaging, and consumer awareness for sustainable food packaging.



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